

# **PROGRESS REPORT**

**GRANT NUMBER: 7310035**

**High Capacity Airborne Wind Turbine**

**Altaeros Energies**

**02/01/2014 – 04/30/2014**

**Deliverables Submitted**

No official deliverables were scheduled to be submitted this period.

**Budget**

No costs were submitted for this period.

**Schedule Status**

Our February update indicated that an FAA permitting delay was resulting in a delay of the overall project. We are proposed to put the project on hold for six months until our FAA permitting came through, and to push back the planned installation of our turbine to 2015. AEA project coordinator approved a plan of action to delay the project in March 2014 (see Appendix).

**Percent Complete**

Tasks/Milestones	Start Date	End Date	Percent Complete
Task 1: Final site selection, permitting, and community forum	Mar-13	<a href="#">Dec-14</a>	70%
Task 2: 30 kw turbine assembly and testing in Maine	Jul-13	<a href="#">Apr-15</a>	35%
Task 3: Complete instrumentation plan and shakedown test plan	Jul-13	<a href="#">Dec-14</a>	30%

**Work Progress****Task 1:**

- Site Selection
  - Golden Valley Electric Authority has shared additional information on contractual and legal issues that must be resolved to secure the site.
- Permitting
  - As a first step to FAA approval, Altaeros had formally submitted an FAA obstruction evaluation under Part 77 of FAA guidelines (see [oeaaa.faa.gov](http://oeaaa.faa.gov)). The FAA has responded with a letter asking for clarification of the project details, including coordinates and elevation. Altaeros will respond to this letter within the next 30 days, and expects a response from the FAA within 45 days after that.
- Community Assessment
  - The project was featured on the front page of the New York Times business section on May 20, 2014, and featured in the Fairbanks News Miner on Mar 31, 2014.
  - A video designed to educate the public about the BAT (Buoyant Airborne Turbine) was featured in over one hundred publications and viewed of 600,000 times by the public: <http://youtube.com/watch?v=kIdA4nWANA8>

**Task 2:**

- 30 kw turbine assembly and testing in Maine
  - Team continued 30kW system design work for the Alaska prototype

- Team began speaking with vendors to identify and secure the key components of the prototype.
- Fault detection testing is being conducted on the components of the last prototype test to develop improved processes and higher reliability for the Alaska project

**Task 3:**

- Test experience and data from the previous prototype continues to inform the development of the instrumentation plan

**Future Work****Task 1:**

- Site Selection
  - Preliminarily completed (Eva Creek), unless future permitting problem arises.
- Permitting
  - Work with FAA and airspace consultants to complete FAA aeronautical evaluation of Eva Creek site.
  - Begin formulating permitting strategy for Fish & Wildlife approval of Eva Creek Site
- Community Assessment (after FAA permitting)
  - Initiate follow up conversations to test hypothesis of no community concerns at Eva Creek site, and evaluate need for a Community Forum.

**Task 2:**

- Complete Alaska prototype full pilot design
  - Complete refined design of inflatable shell, including final material selection and structural design
  - Complete generator selection and rotor/turbine design.
  - Complete design of ground station and final winch and tether selection.
  - Update controls and communication system, including remote monitoring and data collection.
  - Implement fault detection and handling capabilities.
  - Work to improve total system reliability.

**Task 3:**

- Instrumentation plan and shakedown test plan
  - Develop initial test plan for 30kW turbine after design completed.

**APPENDIX****Project Delay Email Approval from Alan Baldivieso****From:** Alan P. Baldivieso [mailto:ABaldivieso@aidea.org]**Sent:** Friday, March 07, 2014 3:52 PM**To:** Adam Rein**Cc:** Sean Skaling**Subject:** RE: FAA draft policy

Thanks Adam.

As I understand from our conversation, Altaeros proposes a temporary pause on the EETF project while they wait for the FAA to enact their policy regarding permitting the testing of Airborne Wind Energy Systems. You expect FAA action that would enable you to move forward with permitting in 6 months. During the delay, Altaeros will focus on shoring up financial support needed to complete the full size turbine and shell, which have proved more expensive than originally estimated. Also, the shell material that you plan to use for the demonstration has a life expectancy of 2-2.5 years; therefore, fabrication of the unit should be delayed so that the Maine testing can immediately precede the Alaska demonstration.

In our conversation, I voiced AEA's concerns regarding an indefinite halt to progress on the project. I also stressed AEA's requirement that the functionality and safe operation of the system be thoroughly tested and demonstrated in Maine before shipping to Alaska, and expressed concern that waiting for FAA action before preparing for the Maine tests could result in additional delays to the Alaska demonstration while contingencies are accounted for.

We agreed to check in on a monthly basis to (1) assess FAA's progress towards finalization of the policy, (2) assess Altaeros' progress towards securing funding needed for project completion, and (3) determine if AEA would elect to impose a deadline for progress on the project.

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Alan

# Altaeros Energies and AEA EETF Airborne Wind Turbine project featured on front page of New York Times Business section, March 20, 2014

